

REMARKS

Upon entry of the present amendment, claims 1 and 3-8 will remain pending in the above-identified application and stand ready for further action on the merits. Claims 1 and 3-4 have been amended. Claim 2 has been cancelled. New claims 6-8 are added.

The instant amendment made herein to the claims does not incorporate new matter into the application as originally filed. For example, the amendments to claim 1 find support at page 3, lines 7-11, lines 19-27 and lines 35-37, and Table 1 of page 6 of the specification. The amendments to claims 3 and 4 find support at page 3, lines 35-37 of the specification. New claim 6 is based on the disclosure at page 4, lines 29-35 of the specification. New claim 7 is based on the disclosure at page 2, line 37 of the specification. New claim 8 is based on the disclosure at page 5, line 35 to page 6, line 3 of the specification.

Proper consideration of each of the pending claims (i.e., claims 1 and 3-8) is respectfully requested at present, as is entry of the present amendment.

Claim Rejections under 35 USC § 102

Claims 1-5 have been rejected under 35 USC § 102(b) as being anticipated by JP '938 (JP 60137938 A), GB '355 (GB 600,355) and GB '020 (GB 1,041,020). Reconsideration and withdrawal of these rejections is respectfully requested based upon the following considerations.

The Present Invention and its Advantages

The present invention relates to a method for modifying fibers. Objects of the invention are, for example, to eliminate or minimize the toxic problem of carbon disulfide, ensure ease of

dissolution, and achieve significant effects of modifying moisture absorption, antistatic and shrink resistant properties as compared with the conventional method of coating fibers with regenerated cellulose.

Further, according to the present invention, the fibers are effectively modified so as to exhibit improved moisture absorption, antistatic and shrink resistant properties minimizing the problem of carbon disulfide.

Specifically, as recited in claim 1, the present invention is directed to:

A method for modifying fibers, comprising the steps of:

applying a solution of a low substituted cellulose ether having a molar degree of substitution with alkyl and/or hydroxyalkyl groups in the range of 0.18 to 0.7 in an aqueous sodium hydroxide solution to fibers, and

causing the solution borne on fibers to coagulate,

wherein said low substituted cellulose ether is at least one selected from the group consisting of low substituted methyl cellulose, low substituted ethyl cellulose, low substituted hydroxypropyl cellulose, low substituted hydroxypropyl methyl cellulose, low substituted hydroxyethyl methyl cellulose and low substituted hydroxyethyl ethyl cellulose.

Distinctions over JP '938 (JP 60137938 A)

JP '938 reference fails to disclose or suggest the step of "applying a solution of a low substituted cellulose ether having a molar degree of substitution with alkyl and/or hydroxyalkyl groups in the range of 0.18 to 0.7 in an aqueous sodium hydroxide solution to fibers" of the present invention (claim 1).

At page 2 of the Office Action, the Examiner states that Asahi (JP '938) discloses a process for modifying polymeric material selected from polyester, polyamide and acrylonitrile by treating with an aqueous solution of alkali and cellulose ether having a degree of substitution of 0.03-0.10.

However, JP '938 reference fails to disclose or suggest the use of cellulose ethers having a substitution degree of 0.18 to 0.7.

Therefore, the present invention (independent claim 1 and dependent claims 3-5) is not anticipated by JP '938 reference.

Distinctions over GB '355 (GB 600,355)

GB '355 reference fails to disclose or suggest specifically applying the specific cellulose ether in an aqueous sodium hydroxide solution to fibers, as stated in the present invention.

GB '355 reference merely discloses a method of treating textile material, which comprises applying thereto an aqueous solution of an alkali metal zincate having dissolved therein a cellulose alkyl ether and containing excess alkali metal hydroxide, precipitating the cellulose alkyl ether onto the material, and removing a part but not all of the zinc from the precipitated cellulose alkyl ether by a washing treatment.

On the other hand, in the present invention, to fibers there is applied a specific cellulose ether in an aqueous sodium hydroxide solution, as recited in the pending claims.

Further, GB '355 merely discloses use of hydroxyethyl cellulose ether. However, GB '355 fails to disclose or suggest specifically the specific low substituted cellulose ether, such as low substituted methyl cellulose, low substituted ethyl cellulose, low substituted hydroxypropyl

cellulose, low substituted hydroxypropyl methyl cellulose, low substituted hydroxyethyl methyl cellulose and low substituted hydroxyethyl ethyl cellulose.

Therefore, the present invention (independent claim 1 and dependent claims 3-8) is not anticipated by GB '355 reference.

Distinctions over GB '020 (GB 1,041,020)

GB '020 reference merely discloses a process of conditioning cellulose acetate yarns and fabrics to render them receptive to dyes having affinities for cellulosic materials, which process comprises applying to the cellulose acetate yarns and fabrics an alkaline solution of hydroxyethylcellulose, and thereafter coagulating and regenerating the hydroxyethylcellulose to convert it to a water-insoluble film bonded to the yarns and fabrics. Namely, GB '020 uses only hydroxyethyl cellulose.

On the other hand, in the present invention, it is a recited feature that methyl cellulose, ethyl cellulose, hydroxypropyl cellulose, hydroxypropyl methyl cellulose, hydroxyethyl methyl cellulose or hydroxyethyl ethyl cellulose is employed, as recited in claim 1.

In this regard, GB '020 reference also fails to disclose or suggest the use of methyl cellulose, ethyl cellulose, hydroxypropyl cellulose, hydroxypropyl methyl cellulose, hydroxyethyl methyl cellulose or hydroxyethyl ethyl cellulose, as a low substituted cellulose ether.

Thus, GB '020 fails to disclose or teach the use of the specific cellulose ether as recited in claim 1.

Further, GB '020 reference fails to disclose or suggest the use of cellulose ethers having a substitution degree of 0.18 to 0.7. The reference merely discloses that the substitution degree of hydroxyethyl cellulose is about 0.15 (see page 2, left column, line 48 of GB '020).

Accordingly, the present invention (independent claim 1 and dependent claims 3-8) is not anticipated by GB '020 reference.

Additional Consideration

As mentioned above, none of the cited references disclose or suggest the specific features as recited in independent claims 1. Therefore, a *prima facie* case of obviousness is not established even if the cited references are combined. Likewise, it follows that a person having ordinary skill in the art would not be motivated by any of the teachings of the cited references to arrive at the present invention as instantly recited in pending claims 1.

Accordingly, the present invention (independent claim 1 and dependent claims 3-8) is not obvious over the cited references.

CONCLUSION

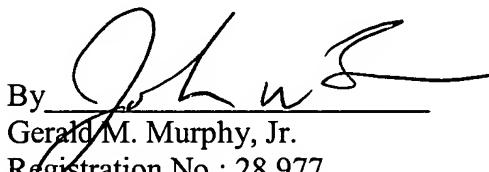
Based upon the amendments and remarks presented herein, the Examiner is respectfully requested to issue a Notice of Allowance clearly indicating that each of pending claims 1 and 3-8 are allowed and patentable under the provisions of Title 35 of the United States Code.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Gerald M. Murphy, Jr. (Reg. No. 28,977) at the telephone number below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By 
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